



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,681	11/20/2001	Ukyo Mori	DP-827 US	9011

7590 11/27/2006  
McGinn & Gibb, PLLC  
Suite 200  
8321 Old Courthouse Road  
Vienna, VA 22182-3817

EXAMINER

DEAN, RAYMOND S

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,681

Applicant(s)

MORI, UKYO

Examiner

Raymond S. Dean

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                             |                                                                                         |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 31, 2006 has been entered.

### ***Response to Arguments***

2. Applicant's arguments, see remarks, filed July 26, 2006 with respect to the rejection(s) of claim(s) 15 – 23 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art Tsuchiya et al. (GB 2055014).

Kaschke teaches an electronic device comprising: a main body (Figure 1); a display disposed on the main body for displaying information (Figure 1, 114); a plate member having a transparent central section overlying the display (Figures 1, 2, the top surface of the user interface module is the plate member, said surface comprises a transparent section enabling the display to be viewed by the user) and a colored section adjacent the transparent central section and positioned other than overlying the display

Art Unit: 2618

(Figures 1, 2, the sections surrounding the transparent section comprise color); and a driving unit connected to the colored section of the plate member for vibrating the plate member in response to an audio signal (Figures 1, 2, Column 2 lines 4 – 8, the electro-acoustic transducer (108) is the driving unit).

Kaschke does not teach vibrating the plate member to cause the plate member to create a sound in response to an audio signal and the driving unit comprising: a planar voice coil; and a first magnet disposed inside the planar voice coil and a second magnet disposed outside the planar voice coil.

Azima teaches vibrating the plate member to cause the plate member to create a sound in response to an audio signal (Figure 4, Page 11 lines 26 – 28, Page 12 lines 1 – 8, the transparent section, which is a part of a top part or surface, is vibrated to create a sound in response to an audio signal).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the interface module of Kaschke with the transparent panel of Azima for the purpose of enabling the mobile phone to have only one surface area used for both a display and a loudspeaker thus removing limits placed on the minimum size of the mobile phone as taught by Azima.

Tsuchiya teaches a planar voice coil; and a first magnet disposed inside the planar voice coil and a second magnet disposed outside the planar voice coil (Figure 2, Column 2 of Specification lines 84 – 88, left side of voice coil (3) is the outside and the right side of said voice coil is the inside).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transducer of Kaschke in view of Azima with the voice coil magnet configuration taught by Tsuchiya for the purpose of providing high fidelity sound production as taught by Tsuchiya.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15 – 17, 19 – 20, 22 – 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaschke (5,999,821) in view of Azima et al. (WO 00/02417) and in further view of Tsuchiya et al. (GB 2055014).

Regarding Claim 15, Kaschke teaches an electronic device comprising: a main body (Figure 1); a display disposed on the main body for displaying information (Figure 1, 114); a plate member having a transparent central section overlying the display (Figures 1, 2, the top surface of the user interface module is the plate member, said surface comprises a transparent section enabling the display to be viewed by the user) and a colored section adjacent the transparent central section and positioned other than overlying the display (Figures 1, 2, the sections surrounding the transparent section comprise color); and a driving unit connected to the colored section of the plate member

Art Unit: 2618

for vibrating the plate member in response to an audio signal (Figures 1, 2, Column 2 lines 4 – 8, the electro-acoustic transducer (108) is the driving unit).

Kaschke does not teach vibrating the plate member to cause the plate member to create a sound in response to an audio signal and the driving unit comprising: a planar voice coil; and a first magnet disposed inside the planar voice coil and a second magnet disposed outside the planar voice coil.

Azima teaches vibrating the plate member to cause the plate member to create a sound in response to an audio signal (Figure 4, Page 11 lines 26 – 28, Page 12 lines 1 – 8, the transparent section, which is a part of a top part or surface, is vibrated to create a sound in response to an audio signal).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the interface module of Kaschke with the transparent panel of Azima for the purpose of enabling the mobile phone to have only one surface area used for both a display and a loudspeaker thus removing limits placed on the minimum size of the mobile phone as taught by Azima.

Tsuchiya teaches a planar voice coil; and a first magnet disposed inside the planar voice coil and a second magnet disposed outside the planar voice coil (Figure 2, Column 2 of Specification lines 84 – 88, left side of voice coil (3) is the outside and the right side of said voice coil is the inside).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transducer of Kaschke in view of Azima with the voice

coil magnet configuration taught by Tsuchiya for the purpose of providing high fidelity sound production as taught by Tsuchiya.

Regarding Claims 16, 19, Kaschke in view of Azima and in further view of Tsuchiya teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches a driving unit installed on the colored section of the plate member (Figures 1, 2, Column 2 lines 4 – 8, the electro-acoustic transducer (108) is the driving unit). Tsuchiya further teaches first and second magnets and a planar voice coil (Figure 2, Column 2 of Specification lines 84 – 88).

Regarding Claims 17, 20, Kaschke in view of Azima and in further view of Tsuchiya teaches all of the claimed limitations recited in Claims 16, 19. Tsuchiya further teaches the planar voice coil comprising a shape of a quadrilateral frame and the first and second magnets are quadrilateral shaped complementary to the shape of the planar voice coil (Figure 2, Column 2 of Specification lines 84 – 88).

Regarding Claim 22, Kaschke in view of Azima and in further view of Tsuchiya teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches a plurality of driving units installed at plural places on the colored section of the plate member (Figures 1, 2, transducers (108, 110)).

Regarding Claim 23, Kaschke in view of Azima and in further view of Tsuchiya teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches wherein the colored section comprises an edge section circumscribing the transparent central section (Figures 1, 2, the sections surrounding the transparent section comprise color).

5. Claims 18, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaschke (5,99,821) in view of Azima et al. (WO 00/02417) in view of Tsuchiya et al. (GB 2055014), as applied to Claims 16, 19 above, and further in view of Porrazzo et al. (5,872,855).

Regarding Claims 18, 21, Kaschke in view of Azima and in further view of Tsuchiya teaches all of the claimed limitations recited in Claims 16, 19. Kaschke in view of Azima and in further view of Tsuchiya does not teach a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed.

Porrazzo teaches planar voice coil (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped) and a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the voice coil arrangement taught by Porrazzo in the mobile device of Kaschke in view of Azima and in further view of Tsuchiya for the purpose of adding versatility to the performance of the loudspeaker panel as taught by Porrazzo.

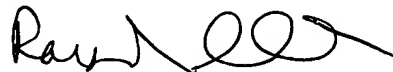


**Conclusion**


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Raymond S. Dean  
November 13, 2006

  
EDWARD F. URBAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600